

If the rather frequent estimation is creditable that the rate of breeding progress in maize is limited by the rate at which genes may be "reshuffled," i.e., the rate of crossing over, it would seem worth while to further investigate the possibilities of utilizing agents affecting the cation linkages of the chromosomes in lifting this ceiling, if it exists.

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2. An effect of beta-hydroxyethylhydrazine on time of flowering in maize.

.075, .15, .3, and .6% concentrations of this chemical, which reportedly hastens date of flowering in pineapple, were applied as foliar spray to the maize single cross WF9 X 38-11, beginning at the 3 leaf stage, and repeated at 4 day intervals thereafter for 3, 6, 9, and 12 successive treatments. No important effects on either date of flowering or growth habit were noticeable.

However, one seed soaking treatment was made in addition to the foliar sprays. Seeds soaked over night in an .6% aqueous solution of beta-hydroxyethylhydrazine germinated more slowly than the controls, and growth was further drastically retarded after emergence. The treated seedlings became somewhat chlorotic, and made almost no progress for about 10 days. Normal growth then gradually resumed, and the plants flowered in a vigorous manner. A net delay in anthesis of about 14 days was obtained. A reduction in plant height of 2-3 feet occurred. Treated seeds experienced 40% mortality from this rate of treatment, with mortality occurring as both failure to emerge, and as post emergence dying.

Although only one rate of seed soaking treatment was attempted, the results obtained make it seem reasonable that lower rates of this chemical would be worth investigating as a possible means of obviating the costly and hazardous process of split planting in the production of some commercial maize hybrids.

3. Another source of id. (indeterminant growth habit).

A row of selfed maize was found to be segregating 7 indeterminant to 21 normal during the past season. Indeterminant plants were still vegetative as of Nov. 1, no inflorescences having been initiated. As yet, no photoperiodism studies have been made, or tests for allelism with the id recently studied by W. C. Galinat.